Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_\_

**DNA to RNA to Protein – DNA PRACTICE – *D*o** [it] ***N*ow ‘*A*ight**

A. Look at each picture. Then write in the term that best completes each sentence.

**Nucleotide Double Helix Nitrogenous bases**

|  |  |  |
| --- | --- | --- |
| **:::::Desktop:Colorful-Illustration-DNA-double-helix.jpg** | **:::::Desktop:nucleotheme.jpg** | https://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcQgHDZgX4cjVySi5JrveKPq-mp4uS_t9b4AU9bJcrnPG2CXAQXsfA |
| The twisted ladder shape of a DNA molecule is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | This is a picture of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which are the building blocks of DNA. | The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (A, T, C, G) on one strand of nucleotides form bonds with bases on the other strand. |

B. Write the correct terms in the blanks.

**Nitrogenous bases Deoxyribose Nucleotides Thymine Chromosomes**

1. The building blocks of DNA are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. The four \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ found in DNA are named adenine, thymine, guanine, and cytosine.
3. The three parts of a DNA nucleotide are a phosphate group, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and a base.
4. In eukaryotes DNA is stored in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inside the nucleus of a cell.
5. In DNA, the nitrogenous bases adenine and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ always bond.

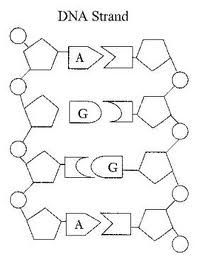
C. The nucleotide sequence of two complementary DNA strands is given: TCC ATT GGA

AGG TAA CCT

Below are nucleotide sequences of DNA strands. Write in the nucleotide sequence of their complementary DNA strand.

1. CAC GCA TAT 2. ATG GGC GAA

3. GAA TCA CCA 4. TAG ACC ATG

D. Label the parts of the DNA molecule

1

2

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4

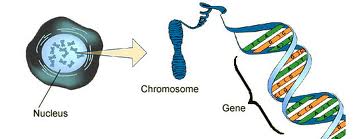
5. Why is DNA described as having a “sugar-phosphate backbone.”

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Why is “deoxyribo” part of DNA’s full name: *d*eoxyribo*n*ucleic *a*cid? (Hint: Think about the parts of a nucleotide.)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E. Review

1. Which set of statements correctly describes the relationship between the terms *chromosomes*, *genes*,and *nuclei*?

1. Chromosomes are found on genes. Genes are found in nuclei
2. Chromosomes are found in nuclei. Nuclei are found in genes.
3. Genes are found on chromosomes. Chromosomes are found in nuclei.
4. Genes are found in nuclei. Nuclei are found in chromosomes.

2. Arrange the structures from smallest to largest: **chromosome, nucleus, nucleotide, gene, nitrogenous base**

|  |  |
| --- | --- |
| Smallest  Largest |  |
|  |
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|  |